Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Amendment of Part 97 of the Commission's	)	RM-11625
Rules to Facilitate Use in the Amateur Radio	)	
Service of Single Slot Time Division Multiple	)	
Access (TDMA) Telephony and Data Emissions	)	

To the Commission:

COMMENTS AND INFORMAL REQUESTS OF JAMES EDWIN WHEDBEE

COMES NOW the Commenter, JAMES EDWIN WHEDBEE, licensee of Amateur Radio Station N0ECN and an interested party in the above-styled proceedings, and pursuant to Sections 1.3 (47 CFR §1.3 – regarding waivers), 1.41 (47 CFR § 1.41 – regarding informal requests for Commission action), and 1.415 (47 CFR § 1.415 – regarding comments to petitions for rulemaking), the undersigned Commenter submits the following for the Commission's consideration, in general support of the ARRL's Petition.

A. **Issue**

1. At issue is an incongruence between Commission rules embodied in Parts 2 and 97 with regard to radio telephony emissions authorized to the amateur radio service, leading to the allowance of multiple-slot time division multiple access (TDMA) telephony and data emissions, but possibly not single-slot TDMA emissions.

2. Authority for Parts 2 and 97 of the Commission's rules and regulations is contained in the Communications Act of 1934, as amended, and the ITU Radio Rules and Regulations, an international agreement binding upon the United States of America.

B. Statutes, International Agreements/Treaties, Rules and Regulations of the Commission

3. ARRL correctly points out that Section 97.3 of the Commission's rules (47 CFR § 97.3) references Section 2.201 of the Commission's rules (47 CFR §2.201). Likewise, ARRL's Petition correctly points out that Section 97.307 (47 CFR §97.307) is unclear whether or not single slot TDMA telephony is authorized; however, as ARRL makes abundantly clear, Section 97.307 seems clearly to be illustrative rather than controlling.

4. The Communications Act of 1934 ("Act") does not specify emissions; however, in Section 303(e) of the Act (47 USC §303), Congress delegates to the Commission authority to *"Regulate the kind of apparatus to be used with respect to its external effects and the purity and sharpness of the emissions from each station and from the apparatus therein…"* That same Section, in subsection (r) thereof, provides that Congress further delegates unto the Commission the authority to: *"Make such rules and regulations and prescribe such restrictions and conditions, not inconsistent with law, as may be necessary to carry out the provisions of this Act, or any international radio or wire communications treaty or convention, or regulations annexed thereto, including*

any treaty or convention insofar as it relates to the use of radio, to which the United States is or may hereafter become a party."

5. Given the incongruence between Parts 2 and 97 of the Commission's rules and regulations, and further given the Act's reliance upon and reference to "treaty or convention," to determine if ARRL should prevail on its Petition, it is essential to consult the International Telecommunications Union's radio rules and regulations, and particularly, the following...

   a. Article I Section IV Paragraph 1.123, wherein it states: "*telephony:* A form of *telecommunication* primarily intended for the exchange of information in the form of speech (CS 1017)."

   b. Article I Section VI Paragraph 1.139, wherein it states: "*class of emission:* The set of characteristics of an *emission*, designated by standard symbols, e.g. type of modulation of the main carrier, modulating signal, type of information to be transmitted, and also, if appropriate, any additional signal characteristics."

   c. Article II Section III Paragraph 2.7, wherein it states: "Emissions shall be designated according to their necessary bandwidth and their classification in accordance with the method described in Appendix 1."

   d. Appendix 1 Section II §§6-7, wherein it states:

*"**Basic characteristics***

§ 6. 1) First symbol - type of modulation of the main carrier

1.1	*Emission of an unmodulated carrier N*	***N***
1.2	*Emission in which the main carrier is amplitude-modulated (including cases where sub-carriers are angle-modulated)*	
1.2.1	*Double-sideband*	***A***
1.2.2	*Single-sideband, full carrier*	***H***
1.2.3	*Single-sideband, reduced or variable level carrier*	***R***

1.2.4	*Single-sideband, suppressed carrier*	***J***
1.2.5	*Independent sidebands*	***B***
1.2.6	*Vestigial sideband*	***C***
1.3	*Emission in which the main carrier is anglemodulated*	
1.3.1	*Frequency modulation*	***F***
1.3.2	*Phase modulation*	***G***
1.4	*Emission in which the main carrier is amplitude- and angle-modulated either simultaneously or in a pre-established sequence*	***D***
1.5	*Emission of pulses* ***2***	
1.5.1	*Sequence of unmodulated pulses*	***P***
1.5.2	*A sequence of pulses*	
1.5.2.1	*modulated in amplitude*	***K***
1.5.2.2	*modulated in width/duration*	***L***
1.5.2.3	*modulated in position/phase*	***M***
1.5.2.4	*in which the carrier is angle-modulated during the period of the pulse*	***Q***
1.5.2.5	*which is a combination of the foregoing or is produced by other means*	***V***
1.6	*Cases not covered above, in which an emission consists of the main carrier modulated, either simultaneously or in a pre-established sequence, in a combination of two or more of the following modes: amplitude, angle, pulse*	***W***
1.7	*Cases not otherwise covered*	***X***

2 *Emissions where the main carrier is directly modulated by a signal which has been coded into quantized form (e.g. pulse code modulation) should be designated under § 1.2) or 1.3).*

2) Second symbol - nature of signal(s) modulating the main carrier

2.1	*No modulating signal*	***0***
2.2	*A single channel containing quantized or digital information without the use of a modulating sub-carrier* ***3***	***1***
2.3	*A single channel containing quantized or digital information with the use of a modulating sub-carrier* ***3***	***2***
2.4	*A single channel containing analogue information*	***3***
2.5	*Two or more channels containing quantized or digital information*	***7***
2.6	*Two or more channels containing analogue information*	***8***
2.7	*Composite system with one or more channels containing quantized or digital information, together with one or more channels containing analogue information*	***8***
2.8	*Cases not otherwise covered*	***X***

3 *This excludes time-division multiplex.*

3) Third symbol - type of information to be transmitted 4

3.1	*No information transmitted*	***N***
3.2	*Telegraphy - for aural reception*	***A***
3.3	*Telegraphy - for automatic reception*	***B***
3.4	*Facsimile*	***C***
3.5	*Data transmission, telemetry, telecommand*	***D***
3.6	*Telephony (including sound broadcasting)*	***E***
3.7	*Television (video)*	***F***
3.8	*Combination of the above*	***W***
3.9	*Cases not otherwise covered*	***X***

4 *In this context the word "information" does not include information of a constant, unvarying nature such as is provided by standard frequency emissions, continuous wave and pulse radars, etc.*

Sub-Section IIB – Optional characteristics for the classification of emissions

§ 7 Two optional characteristics should be added for a more complete description of an emission. These are:

Fourth symbol - Details of signal(s)

Fifth symbol - Nature of multiplexing

Where the fourth or fifth symbol is used it shall be as indicated below.

Where the fourth or the fifth symbol is not used this should be indicated by a dash where each symbol would otherwise appear.

1) Fourth symbol - Details of signal(s)

1.1	*Two-condition code with elements of differing numbers and/or durations*	***A***
1.2	*Two-condition code with elements of the same number and duration without error-correction*	***B***
1.3	*Two-condition code with elements of the same number and duration with error-correction*	***C***
1.4	*Four-condition code in which each condition represents a signal element (or one or more bits)*	***D***
1.5	*Multi-condition code in which each condition represents a signal element (of one or more bits)*	***E***
1.6	*Multi-condition code in which each condition or combination of conditions represents a character*	***F***
1.7	*Sound of broadcasting quality (monophonic)*	***G***
1.8	*Sound of broadcasting quality (stereophonic or quadraphonic)*	***H***
1.9	*Sound of commercial quality (excluding categories given in sub-paragraphs 1.10 and 1.11)*	***J***
1.10	*Sound of commercial quality with the use of frequency inversion or band-splitting*	***K***
1.11	*Sound of commercial quality with separate frequency-modulated signals to control the level of demodulated signal*	***L***
1.12	*Monochrome*	***M***
1.13	*Colour*	***N***
1.14	*Combination of the above*	***W***
1.15	*Cases not otherwise covered*	***X***

2. Fifth symbol - Nature of multiplexing

2.1	*None*	***N***
2.2	*Code-division multiplex* ***5***	***C***
2.3	*Frequency-division multiplex*	***F***
2.4	*Time-division multiplex*	***T***
2.5	*Combination of frequency-division multiplex and time-division multiplex*	***W***
2.6	*Other types of multiplexing*	***X***

5 *This includes bandwith expansion techniques. "*

C. ANALYSIS

6. Because the Commission's rules and regulations are directly premised on ITU Radio Rules and Regulations, it is the ITU Radio Rules and Regulations which determine how telephony emissions ought to be defined. The ITU Radio Rules and Regulations do not prohibit telephony emissions which contain "X" as the second symbol in the designator. The Act requires the Commission to implement rules and regulations which are consistent with ITU Radio Rules and Regulations. Any incongruence between Parts 2 and 97 which disallows the use of FXE or FXD emissions by amateur radio and amateur satellite stations are proscribed by the ITU Radio Rules and Regulations by reason of inconsistency.
7. ARRL's Petition correctly asserts that the provisions of Sections 97.3 and 97.303 listing authorized emissions are illustrative rather than restrictive in light of the purpose of the amateur service and further given the clear authority to use TDMA emissions which aren't single-slot.

D. CONCLUSIONS, RECOMMENDATIONS

8. Therefore, the FXE and FXD emissions sought by ARRL are already authorized by the ITU Radio Rules and Regulations, and the contrary inconsistencies between Parts 2 and 97 of the Commission's rules and regulations should be amended, exactly as suggested by ARRL in its Petition, to include the ARRL's proposed regulatory language.
9. The undersigned Commenter would only recommend the addition of a footnote, comment, or clarifying parenthetical notation stating clearly the Commission's intent that the enumeration of specific emission designators is illustrative rather than controlling, and does not preclude the use of technologies, techniques, or practices aimed at more efficient uses of the spectrum

allocated to the amateur radio and amateur satellite services, provided the underlying modulation meets the general emission privileges authorized by the rules and regulations.

10. Further, this Commenter recommends the Commission issue a Notice of Inquiry toward a Notice of Proposed Rulemaking (NPRM) aimed at amending Part 97 of the Commission's rules to, rather than determine radio emissions, determine maximum allowable bandwidth within a particular portion of the RF spectrum (i.e., 300 Hz bandwidth for LF; 3,000 Hz bandwidth for MF; 8 kHz bandwidth for HF; 25 kHz bandwidth for VHF; 6 MHz bandwidth for UHF; and unlimited bandwidth for SHF, EHF, and above EHF.

WHEREFORE, pursuant to Section 1.41 of the Commission's rules and regulations governing informal requests for action, the undersigned respectfully recommends – in addition to the regulatory language of ARRL in its Petition for Rulemaking, which this Commenter wholly supports – a footnote, comment, or clarifying parenthetical notation clearly stating the Commission's intent that the enumeration of specific emission designators be deemed as and is illustrative rather than controlling and does not preclude, restrict, or prohibit the use of technologies, techniques, or practices aimed at more efficient uses of the spectrum allocated to the amateur radio and amateur satellite services, provided the modulation type used is consistent with the general emission privileges authorized by the rules and regulations.

WHEREFORE AGAIN, pursuant to Section 1.41 of the Commission's rules and regulations governing informal requests for action, the undersigned respectfully recommends the Commission issue its Notice

of Inquiry toward adoption of a NPRM regulating emissions of amateur radio and amateur satellite stations by bandwidth rather than specific emission mode.

Respectfully Submitted:

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